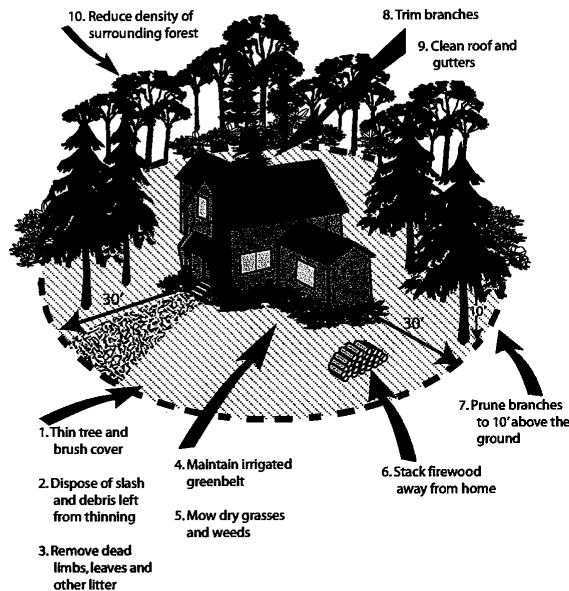


APPENDIX A – FIRE PROTECTION GUIDELINES



WHO IS RESPONSIBLE FOR WILDLAND/INTERFACE FIRE MITIGATION?

Traditionally firefighters are viewed as the "Protectors" and the homeowners as the "Victims" of wildland fire. This paradigm is shifting now from "Protector/victim" to "Partner-Partner". Everyone associated with the wildland/urban interface should be prepared for the effects of wildland fires before they even starts. Responsibility for management, preservation, restoration and mitigation rests with every one in the community. This responsibility does not imply stopping wildland fires, nor does it mean preventing people from living in wildland/urban interface areas. Instead a stewardship between homeowners and firefighters as a combined effort, is recognized as necessary to minimize costly destruction and preserve lifestyles through a smart and effective community-wide effort.

WHAT DOES CURRENT WILDLAND/INTERFACE FIRE RESEARCH TELL US?

In the case of wildland fires, the more new development occurring in highly flammable and hazardous vegetative fuels, the more serious potential for loss of life and property. With appropriate space clearance (a defensible space) and modified building materials, wildland hazard risks can be effectively reduced by 50 percent.

WHAT IS THE WILDLAND/URBAN INTERFACE FIRE PROBLEM?

Population Growth and Expansion

Over the past century, America's population has nearly tripled, with much of the growth flowing into traditionally natural areas. Residential development has entered remote agricultural and forest wildland areas. This movement has created an extremely complex landscape that has come to be known as the wildland/urban interface. Encroaching development into forest, grasslands and farms has resulted in numerous problems, including catastrophic wildfires, which threaten lives, home and business. Threats to life and property from wildfires and the costs for suppressing them are expanding at an astounding rate. In 2000, over 8.7million acres burned that cost the taxpayers over \$1.4 Billion, not including property loss estimates.

COULD YOUR HOME SURVIVE A WILDFIRE?

Many homes are destroyed by wildfire each year that could have been saved with preventive actions beforehand. **FIREWISE LANDSCAPING** can create a line of defense against the threat of wildfire by creating a "*defensible space*" around the home. The goal is to *break the chain* of flammable fuel between the home and burnable areas such as a forest. You can landscape for fire protection while maintaining a natural look to your surroundings. It does not mean that you are left with a barren landscape. Work with plants native to the site, use patterns found in nature, and consider hardiness zones and planting sites when choosing plants and trees. Group together plants with similar water needs and space them to create a *fuel mosaic* that will conserve water and protect against a fire ladder. A fire ladder is created when plants are arranged in a way that allows flames to move from the ground into taller vegetation.

Following is a firewise checklist to help create a defense zone for the home.

RECOMMENDATIONS TO MITIGATE WILDFIRE DANGER

Can You Go It Alone For Three Days?

The first 72 hours after a major emergency or disaster are critical. Electricity, gas, water and telephones may not be working. In addition public safety services such as police and fire departments will be busy handling serious crises. You should be prepared to be self sufficient – able to live without running water, electricity and/or gas, and telephones – for at least three days following a major emergency. To do so, keep on hand in a central location the following.

ESSENTIALS SUPPLIES

Water – 1 gallon per person per day (a week's supply of water is preferable)

Water purification kit
First aid kit, freshly stocked

First aid book
Food
Can opener (non-electric)
Blankets or sleeping bags
Portable radio, flashlight and spare batteries
Essential medications
Extra pair of eyeglasses
Extra pair of house and car keys
Fire extinguisher – A-B-C type
Food, water and restraint (Leash or carrier for pets)
Cash and change
Baby supplies, formula, bottle, pacifier, soap and baby powder, clothing, blankets, baby wipes, disposable diapers, canned food and juices if applicable

SAFETY AND COMFORT

Sturdy shoes
Candles and matches
Change of Clothing
Garden hose for siphoning and firefighting
Communication kit: paper, pens, stamps
Heavy gloves for clearing debris
Light Sticks
Knife or razor blades
Tent

SANITATION

Large plastic trash bags for waste, tarps and rain ponchos
Large trash cans
Bar soap and liquid detergent
Shampoo
Toothpaste and brushes
Feminine hygiene supplies
Toilet paper
Household bleach

COOKING

Plastic knives, forks, spoons
Paper plates
Paper towels
Heavy duty aluminum foil
Camping stove for outdoor cooking
(caution before using fire indoors)

TOOLS AND SUPPLIES

Axe, shovel, broom

Tool kit including a screwdriver, pliers and a hammer

Plastic tape, staple gun and sheeting for window replacement

Area map

Adjustable wrench for turning off gas

Coil of one half (1/2) inch rope

Bicycle

USEFUL WEB LINKS

Additional emergency preparedness information can be found at the following addresses:

The U.S. DEPARTMENT OF HOMELAND SECURITY (www.ready.gov)

AMERICAN RED CROSS: ([www.redcross.org/services/disaster/be prepared](http://www.redcross.org/services/disaster/be_prepared))

FEDERAL EMERGENCY MANAGEMENT AGENCY

([HTTP://WWW.FEMA.GOV/LIBRARY/PREPANDPRE.SHM](http://www.fema.gov/library/prepandpre.shm))

FIRE RESISTANT PLANTS FOR MONTANA LANDSCAPES

Groundcover and Herbaceous Plants		Trees	SHRUBS
Alfalfa Bergenia	Penstemon Pinks	White Alder	Antelope Brush
Blanket Flower			
Kentucky Bluegrass	Poppy, California	Ash, Green Ash	Buckthorn
	Poppy		
Buffalo grass	Potentilla	Quaking Aspen	Buffaloberry, Russett, Silver
			Cherry, Sand, Naking
Evergreen Candytuft	Primrose, Mexican	Birch	
Carpet Bugle	Evening Primrose		
Spring Cinquefoil	Red hot Poker Ryegrass	Cottonwood,	Chokecherry
Columbine Coral		Narrowleaf	
Bells Coreopsis	Pussytoes	Cottonwood	Shrubby Cinquefoil
Cotomeaster, Rock,	Sage	Hackberry	Deerbrush (Buckbrush)
Bearberry			
Shasta Daisy Daylily	Goldmoss Sedum	Black Locust	Red osier Dogwood
	Silver		
Drosanthemum	Spreader Snow in Summer	Maple, Big tooth,	Gooseberry and Currants
		Boxelder, Rocky	
		Mountain Maple	
Dusty Miller	Stonecap, Green	Russian Olive	Honeysuckle
	Stonecap		
Fescue, Blue, Tall,	Wild Strawberry	Poplar	Common Lilac
Creeping Red Rax			
Fleabane Four o'clock	Sunrose	Prunus	Mountain Mahogany
Geranium, Hardy,	Common Thrift		Mockorange
Bloodred Wild Ginger	Wooly Thyme,		Native Plum

Hen and Chicks Iris	Creeping Thyme		Pyracantha
Kinnickinnick	Valerian		Raspberry
Lambs Ear	Canadian Violet		Rose (most members of this family)
	Virginia Creeper		Saltbush
Lavender	Western Wheatgrass		Sumac, Skunkbush
Lupine	Crested Wheatgrass (Low growing)		
Creeping Mahonia	Winterfat		
Mock			
Strawberry Mountain	Yarrow, White,		
Spray	Femleaf, Wooly		
Dwarf Periwinkle	Yucca		
Myrtle Orchard			
Grass Rocky Mountain			

FIREWISE CHECKLIST

Display your name and house number in front of your property to assist firefighters and other emergency personnel in locating your home.

Have smoke detectors in working order installed in the home with at least one located in or near sleeping areas. Check regularly to maintain good working order.

Determine the amount of defensible space necessary. Keep in mind property boundaries and the ownership of adjacent properties. Consider the impact of slope percent (uphill, sides and downhill). Evaluate the area surrounding the home in terms of defensible space and identify areas for correction. Develop a plan for correcting the problems, coordinate with adjacent landowners if necessary.

To make a good fire defense of a home a defensible area of thirty (30) feet from all sides of a home should be considered. This will allow fire vehicles access to the home and will cut down on materials that will be fuel for a fire.

Make periodic inspections of your home looking for deterioration such as breaks and spaces between tiles, warping wood or cracks and crevices in the structure. Any of these allow embers to find a ignition point on a structure.

Periodically inspect your property, clearing dead wood and dense vegetation at a distance of at least thirty (30) feet from your house. Move firewood away from the house or attachments like fences or decks.

In the case of a fire, first call for help. Close all entrances, windows and other openings. This includes doors, garage doors, windows, vents, shutters, and heavy drapes, Venetian blinds or other window coverings. This action is to prevent sparks from blowing into the home. Have tools (shovel, rake, etc) and water available. Fill buckets and other bulk containers (Bathtubs, sinks) with water. PROTECT YOURSELF. Wear cotton/wool clothing including long pants, a long sleeved shirt, boots, gloves and a scarf to protect your face. TURN OFF RESIDENTIAL FUEL. If you use propane turn it off at the tank. WET DOWN YOUR ROOF. If your roof is combustible wet it down with a hose, place the ladder on the side opposite the fire. PREPARE AUTOMOBILES FOR EVACUATION. Back as many autos as possible into the garage. Close the garage door. Close the garage door after you as you evacuate. If this is not possible park autos so they are heading in the direction of the evacuation route. If possible TAKE PETS.

SAFE EVACUATION. Be aware of escape routes that will allow for safe evacuation from the area and will keep the routes open for the necessary emergency vehicles trying to protect the property. Make sure that your driveway and any bridges or culverts are the recommended width, strength and length to accommodate the width and the weight of emergency vehicles and that it will allow for such vehicles to turn around and pass if necessary.

Within five (5) feet of structures:

Maintain an area of non-combustible material within 5 feet of structures- flowers, plants, concrete, gravel, mineral soil, etc. If native vegetation is properly modified, a wildfire can be slowed down, the length of flames shortened, and the amount of heat reduced, all of which contribute to a home surviving a fire. Supplemental irrigation is especially important to keep plants green in this area.

Within Five (5) to ten (10) feet of Structures:

(Increase distance below structure if slope is greater than 10%):

Slope affects the size of defensible space. Homes near steep slopes will need to clear additional vegetation to mitigate the effects of radiant and convective heat currents and flame lengths. The downward distance is particularly important because slopes will increase flame length.

The area between five (5) feet and thirty (30) feet from the home provides the critical area for firefighting efforts. Fuel reduction is important here in the terms of reduced volume and density.

Maintain surface vegetation at Three (3) inches or less in height.

Remove all downed trees, bush, limbs, etc.. Prune bushes and shrubs regularly. Remove excess growth as well as dead leaves and branches to decrease their flammability, and the threat they could pose as a ladder fuel during a wild land fire.

From ten (10) to Thirty (30) feet of Structure (increase distance below structure if slope is greater than 10%):

Slope affects the size of defensible space. Homes near steep slopes will need to clear additional vegetation to mitigate the effects of radiant and convective heat currents and flame lengths. The downward distance is particularly important because slopes will increase flame lengths.

Thin trees to ten (10) feet between crowns.

Prune limbs of remaining trees to ten (10) to fifteen (15) feet in height from the ground or one-third (1/3) of total live crown, whichever is less. This is to prevent fire burning through tall grass from igniting these limbs and climbing to the top of the trees with relative ease.

Remove all downed trees, brush, limbs etc.

Thirty (30) feet from structure and Beyond.

Effective fuel reduction in this area includes selective pruning and thinning trees and limiting dead trees (Snags) to two (2) per acre. It is also important to make sure that these dead trees cannot fall onto the home or block access roads or driveways.

Thin trees to ten (10) to fifteen (15) feet between crowns.

Prune limbs on remaining trees to Fifteen (15) feet above the ground.

OTHER FIRE SAFE PRACTICES:

Give your home added protection with “fuel breaks” such as driveways, gravel, stone, tile, or cement walkways and green lawns.

Mow lawns regularly. Remove tall dry grasses. Tall dry grasses provide a path for fire that can lead directly to a home or into trees.

Clear or reduce vegetation from alongside your driveway or road edge, and make sure your driveway is wide enough and adequate for fire trucks to turn around.

Have the power company cut overhanging branches away from the power lines.

Dispose of all slash and flammable debris from your property. If you intend to burn, follow all applicable open burning regulations and requirements (Possess a burn permit; call it in, no burning after sundown, no open burning before March 1 or after November 30 for Gallatin County residences. For this area the Burn permits can be obtained from Central Valley Fire in Belgrade or from a community member (Sandy Maher) who sells them for the department and the cost is \$15.00 a year).

Clean the roof and gutter of needles, leaves, branches and other combustible debris. During a wild land fire, leaves on the roof and/or in the gutter could be ignited by flying embers.

Provide a fifteen (15) foot clearance between your chimney and the nearest branches.

Makes sure your chimney extends three (3) feet above the roof and is capped with an approved spark arrester.

Your roof should be of a fire resistance material. A wood shake roof should be treated with UL approved fire retardant chemical or replaced.

Enclose open spaces beneath features such as decks, balconies, and stilts to prevent combustible materials and debris from accumulating and hot embers from getting in. Screening no larger than one-eighth (1/8) inch is recommended.

Locate the propane tank at least twenty (20) feet from the structure and within a ten (10) foot clearing.

Stack your firewood at least one hundred (100) feet from the house and always on the uphill side.

Ensure that your water supply is usable during a fire emergency, if possible. Keep garden hoses readily available. If you have a generator make sure it is in good working condition. Check hoses regularly for leaks and deterioration.

Keep storage areas clean. Do not allow oily rags, flammable chemicals or newspapers to accumulate.

Makes sure your motorized garden equipment (such as lawnmowers and chainsaws) has approved and functioning sparks arresters. Maintain it on a regular basis and use caution when refueling.